

4268

4269

4269

4268

Diag. Cht. No. 5101-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey *Hydrographic*
Field No. *4268* Office No. *4269*

LOCALITY
State *California*
General locality *San Diego*
Locality *Bay.*

1922-1923

CHIEF OF PARTY

H. A. Seaman - R. R. Sukers

LIBRARY & ARCHIVES

DATE

B-1870-1 (1)++

42684269

42684269

Form 504	
DEPARTMENT OF COMMERCE	
U. S. COAST AND GEODETIC SURVEY	
State: <u>California</u>	
11-5613	
DESCRIPTIVE REPORT.	
Hyd.	Sheets No. { 4268 4269
LOCALITY:	
4268 - San Diego Bay - Ent. to Coronados I.	
4269 - " " - Coronados I. to Naval Base	
1922, 23.	
CHIEF OF PARTY:	
H.A. Seran - R.B. Lukens	

DESCRIPTIVE REPORT

to accompany

Hydrographic Sheets No 6 & No 7. (Field)

Revision of San Diego Bay.

STR. PIONEER R. R. Lukens
Chief of Party

1922 - 1923.

EXTENT OF REVISION In view of the increasing importance of San Diego Bay, the extensive naval establishment, and that the more recent surveys did not cover the whole area, a complete resurvey of the commercially important part of the Bay was decided upon. This was carried out on a system of one hundred meter lines normal to the contours with such additional soundings and cross lines as appeared necessary from the entrance to Beacon 12. Above Beacon 12 three hundred meter lines were run across the deeper water which did not show any changes in the contours except in the dredged area off the new naval repair base. This area was developed with one hundred meter lines except where prevented by the large fleet of decommissioned destroyers moored over it.

DIVISION OF THE WORK The area from about eight hundred meters south of Ballast Point to the ocean covering the entrance channel and bar, was done by a party from the DISCOVERER in charge of Lieut. H.W. Hemple. This division was made for the more efficient operation of the parties while the DISCOVERER was washing boilers in San Diego Harbor and the PIONEER sounding outside. The work done by the party from the DISCOVERER is shown with blue position numbers and that by the party from the PIONEER with red. Each party has plotted its own work.

CHANNEL OVER THE BAR The least depth found on the range thru the channel over the bar was thirty five feet. 34 fms.
The depths appear slightly greater immediately to the west of the range. The channel appears to have shoaled three to four feet since the survey of 1916. The sides of the channel were not developed sufficiently by that survey to the amount of constriction since then. 36 fms.

CHANGES IN DEPTH The extensive changes in depths from those shown on the survey of 1917 due to dredging are for the most part shown on Chart 5107 edition of September 1922.

Slight changes in the critical part of the depth curve opposite Ballast Point were obtained possibly due to the difference in development.

The middle ground to the north of Ballast Point seems to be traveling southward a small amount. Twenty one feet, the least depth found on this ground during this examination, is two feet greater than the nineteen feet shown on the chart, but the examination was not close enough to disprove the existence of the nineteen foot spot.

There appears to be a slight encroachment on the channel of the curves on the side opposite the La Playa Quarantine station. The six foot curve on the west side of the channel just above the Quarantine wharf has extended southward some fifty meters.

The depth just off the Quarantine Wharf appears to be decreasing though the bank slopes so steeply there that a slight error in position could cause this. Soundings of 16 and 17 feet were obtained about five meters from the wharf by this examination.

A fifteen foot channel to the Naval Training Station and Marine Base on the north side of the Bay is correctly shown on the September 1922 edition of Chart 5107 as are the changes due to dredging on both sides of the Municipal Pier.

A new pier was being constructed and a dredge was operating immediately north of the Municipal Pier when the party left the field. No blue prints of the proposed construction and dredging could be had at that time but they can be obtained from the San Diego Harbor Commission as soon as available.

The narrow channel into Spanish Bight shown ten feet on the chart now has nine foot spots.

The area just east of the Naval Air Station shown as five feet on the chart has depths ranging from three to eleven feet.

The channel into Glorietta Bay shown eleven feet on the chart now has depths of nine feet.

The dredged off the Naval Repair Base is shown on the chart.

The following shoal depths of small extent were found in the main channel:

36 feet in 40 to 48 feet 440 meters 4 degrees from Signal Rear

27 " " 33 " 40 " 520 " 327 " " " North

31 " " 35 " 320 " 211 " " " Off

19 " " 22 " 24 2175 " 120 " Beacon 12

This sounding is considered doubtful as a reexamination failed to find less than twenty two feet.

AIDS TO NAVIGATION

The positions of the aids to navigation are plotted on the sheet. Spar S 6 somewhat inside the five fathom curve, perhaps intentionally as the buoy previously there was carried away. The new structure for Beacon 8 was determined carefully by plane table checked by theodolite cuts.

The 15 ft. channel to the Naval Training Station was unmarked at the time the party left the field. It is practically unused at the present. The Naval Authorities have requested the Lighthouse Service to mark this channel.

SURVEY METHODS The phosphor bronze center lead lines were used for all soundings, and lead line corrections were thus eliminated. The performance of these lines is the subject of a separate report.

TIDE GAUGES The section of the work to the west of the Naval Air Station was reduced from the tabulations taken from the automatic gauge on the Quarantine wharf. The upper section was reduced from readings on the staff at the Santa Fe wharf. This staff was coordinated with the automatic gauge by means of simultaneous observations.

BOAT USED A 30 ft. navy motor sailer was used in the hydrography. In order to slow down sufficiently it was necessary to use a bucket drag. When running slow, the two cycle engine stalled frequently seriously interrupting the work. The boat was very satisfactory except for its motive power.

REJECTED WORK Considerable work was rejected because of blunders in angles or soundings. This was to be expected as both the recorder and left angle man had to be broken in, as well as the crew. The sounding was done intermittently, which also interfered with the training of the party.

FUTURE DEVELOPEMENT Considerable development work is planned for San Diego Bay, and frequent revisions will be necessary to keep the chart up to date. A new mole type pier is now under construction as shown on the sheet. Considerable dredging will have to be done to make this pier available for ocean ships.

Respectfully submitted

To the Director,
Coast & Geodetic Survey
Washington, D.C.

Lieut., C. & G. Survey.

Approved,

R. R. Lubens
Comdg. Str PIONEER

STATISTIC TABLE * SMOOTH SHEETS Nos 6 & 7

Date	Vol.	Letter	Soundings	St. Mi.	Angles
12/5/22	1	a	240	5.1	124
12/6/22	1	b	744	14.1	288
12/7/22	1&2	c	863	15.7	346
12/8/22	2	d	690	14.5	346
12/11/22	2&3	e	590	12.1	274
12/12/22	3	f	152	4.4	93
12/15/22	3	g	468	9.2	252
12/16/22	3	h	440	7.1	168
12/27/22	3&4	j	657	13.3	268
12/28/22	4	k	171	3.3	66
1/ 6/23	4	l	183	4.0	90
1/29/23	4	m	513	16.3	274
2/ 3/23	4	n	383	8.2	144
2/ 9/23	5	p	443	11.6	222
2/10/23	5	q	347	6.5	161
2/13/23	5	r	479	9.8	209
2/14/23	5&6	s	512	10.0	286
2/15/23	6	t	536	8.0	275
2/16/23	6	u	295	6.5	222
2/19/23	6	v	406	7.0	237
2/20/23	6&7	w	102	1.6	59
			9214	188.3	4404

Date, 1923	Letter	Volume	Positions	Soundings	Miles (Stat)	Vessels
January 2	a	1	68	255	10.1	Motor-Sailer
" 3	b	1	135	648	16.6	" "
" 4	c	1, 2	129	553	13.9	" "
" 5	d	2	117	448	11.2	" "
" 8	e	2	133	426	15.5	" "
" 9	f	2, 3	154	401	16.1	" "
" 10	g	3	61	182	5.0	" "
Totals			797	2913	88.4	

May 15, 1923.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
7 volumes of sounding records for

HYDROGRAPHIC SHEET 4269

Locality: San Diego Bay, Calif.

Chief of Party: R. R. Lukens in 1922-1923.

Plane of reference is mean lower low water, reading

1.1 ft. on tide staff at Santa Fe Wharf

3.6 " " auto.gauge " Quarantine Station.

For reduction of soundings, condition of records satisfactory
except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.



Chief, Division of Tides and Currents.

Hydrographic Sheet No. 4269.
San Diego Bay Cal.

The work shown on this sheet covers the ground in a satisfactory manner and appears sufficient for a proper development except that had an additional line been run in the South Channel and the Channel to wharf South west of Signal "Bud" the 18 foot contour could be run full and not broken for want of soundings to complete; the balance of the work has sufficient soundings to develop all contours.

The protracting by the Field Party was found accurate but the plotting, also by the Field Party was not specially good as the time was, apparently ignored and in some instances new soundings were plotted between positions then taken.

Positions numbered only at beginning and ending of lines and not on each position as per Instructions.

Records good except as to time which is faulty and no bottom characteristics or course by compass recorded.

John D. Torrey
5/26/23.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

July 17, 1923.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4269

San Diego Bay

Surveyed in 1923

Instructions dated Oct. 18, 1922.

Chief of Party, R. R. Lukens.

Surveyed by O. S. Reading.

Protracted by D. W. Taylor.

Soundings plotted by R. W. Woodworth.

Verified and inked by J. D. Torrey.

1. The records conform to the requirements of the General Instructions except that no bottom characteristics are given nor compass courses recorded. More uniformity in time intervals would have made the plotting of soundings easier.
2. The plan and character of development fulfill the requirements of the General Instructions.
3. The plan and extent of development satisfy the specific instructions. The latter did not specifically provide for the work included in this survey, but it was authorized subsequently.
4. The sounding line crossings are adequate.
5. The information is sufficient for drawing the usual depth curves.
6. The field drafting was completed to the extent prescribed in General Instructions. The protracting was accurately done, but the positions should have been numbered more frequently. The plotting of soundings was not well done. Time intervals, which were frequently irregular, were generally ignored. In several cases more soundings were plotted than were recorded.

7. The junction with the adjoining work by the same party is satisfactory.
8. No further surveying is required within the area covered by the sheet.
9. The character and scope of the surveying are excellent. The field drafting is fair.
10. Reviewed by E. P. Ellis, July, 1923.

San Diego Bay Calif.

Entrance to Coronado Island

The area covered by this survey and shown on this sheet is good work and appears sufficient to closely develop bottom conditions. No further work appears necessary at this time although Chief of party states "Considerable development work is planned in San Diego ~~Harbor~~ Bay and frequent revisions will be necessary to keep Chart up to date"

The records are well kept and easily followed although "Boat heading by compass and change in course" are not recorded and but few bottom characteristics are recorded and not at top of each page as called for ⁱⁿ "General Instructions"

The plotting by field party found to be good although some errors were found; more than the required number of positions were necessarily checked in the closer developed areas in order to follow lines as all positions are not numbered as required in "General Instructions" nor is the day letter entered at beginning and ending of each line also required ^{by} "General Instructions"

The pencil plotting ^{of soundings} by field party cannot be considered up to standard or even good. Many errors were found but more especially in time spacing. The time recorded is very broken yet with care can be followed but does not seem to have been considered. Sounding figures were plotted too large and for this reason all soundings could not be plotted and in many cases shoaler soundings were

omitted. In some cases more soundings were platted
than recorded and ^{there were} many cases of transposing figures.
Crossings are generally good and coincide closely
yet in some cases ~~the~~ variations of 2 ft. occur.

John D. Torrey.
Cartographer.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

August 27, 1923.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4268

San Diego Bay

Surveyed in 1923

Instructions dated Oct. 18, 1922

Chiefs of Parties, H. A. Saran, R. R. Lukens.

Surveyed by H. W. Hemple, O. S. Reading.

Protracted by D. W. Taylor, J. F. Downey.

Soundings plotted by O. S. Reading, J. F. Downey..

Verified and inked by J. D. Torrey.

1. The records conform to the requirements of the General Instructions except that boats' courses and changes in courses are not recorded, and but few bottom characteristics are given and those are not at the top of the page. More uniformity in time intervals would have made the plotting of soundings easier.
2. The plan and character of development fulfill the requirements of the General Instructions.
3. The plan and character of development satisfy the specific instructions. The latter did not specifically provide for the work included in this survey, but it was authorized subsequently.
4. The sounding line crossings are generally satisfactory. There are several instances of differences greater than is considered permissible, but in all cases the errors did not affect the prevailing depths.
5. The information is sufficient for drawing the usual depth curves.

6. The field drafting was completed to the extent prescribed in General Instructions. The pretracting was well done, but the position numbers and day letters were often too large and were not shown as often as prescribed in General Instructions. Time intervals between soundings, which were very uneven, were generally ignored in plotting. The pencil soundings were too large which caused the omission of an unnecessary number. Shoaler soundings were sometimes omitted and in many cases they were transposed.
7. The junction with the adjoining work by the same party is satisfactory.
8. No further surveying is required within the area covered by the sheet.
9. The character and scope of the surveying are excellent. The field drafting is fair.
10. Reviewed by E. P. Ellis, August, 1923.

Remarks:

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. (7) 4269

State California
General locality . . . ~~Upper~~ San Diego Bay
Locality Coronado I. to Naval Base
Chief of party R. R. Lukens
Surveyed by O. S. Reading
Date of survey February, 1923.
Scale 1. --10,000
Soundings in Feet
Plane of reference . . M.L.L.W. (1.1 ft. on staff at Santa Fe Wharf)
Protracted by D. W. Taylor Soundings in pencil by R. W. Woodworth
Inked by *J. D. Torrey* . . . Verified by *J. D. Torrey*
Records accompanying sheet (check those forwarded):
Records forwarded with sheet of lower bay No. 6
Des. report, _____ Tide books, _____ Marigrams, _____ Boat sheets,
Records & statistics not kept separate from No. 6.
_____ Sounding books, _____ Wire-drag books, _____ Photographs.
Data from other sources affecting sheet

Remarks: Shoreline about Naval Repair Base run in by field party during survey plotted on this sheet. Object of survey on this sheet was to verify previous hydrography and develop any changes.

*The soundings for this sheet are included
in ² sounding books for 4268*

May 15, 1923.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
3 volumes of sounding records for

HYDROGRAPHIC SHEET 4268

Locality: San Diego Harbor Entrance, Calif.

Chief of Party: H. A. Seran in 1923

Plane of reference is mean lower low water, reading
3.6 ft. on tide staff at Quarantine Station, San Diego.
auto. gauge

For reduction of soundings, condition of records satisfactory
except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.



Chief, Division of Tides and Currents.